

**Commonwealth of Kentucky
Division for Air Quality**

PERMIT APPLICATION SUMMARY FORM

Completed by: Robert L. Williams

GENERAL INFORMATION:

Name:	General Shale Brick, Inc.
Address:	Highway 26 South Corbin, KY 40702
Date application received:	3/21/2003
SIC Code/SIC description:	3251, Brick and Structural Clay Tile (slumped brick)
Source ID:	21-235-00022
Source A.I. #:	4204
Activity ID:	APE20040001
Permit:	V-07-010

APPLICATION TYPE/PERMIT ACTIVITY:

<input type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
__Administrative	<input checked="" type="checkbox"/> Title V
__Minor	<input type="checkbox"/> Synthetic minor
__Significant	<input checked="" type="checkbox"/> Operating
<input checked="" type="checkbox"/> Permit renewal	<input type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input checked="" type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input checked="" type="checkbox"/> NSPS	<input type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:001, 1(116)(b)	

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☒ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☐ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☐ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)	Potential (tpy)	Allowable (tpy)
PM	224.513	267.823	N/A
PM ₁₀	114.479	153.728	N/A
SO ₂	69.642	117.463	< 92.37
NO _x	22.995	38.785	N/A
CO	78.840	132.977	N/A
VOC	1.577	2.66	N/A
Single HAPs	24.309 (HF CAS No.: 07664-39-3)	41.001 (HF CAS No.: 07664-39-3)	N/A
Source wide HAPs	35.885	60.527	N/A

SOURCE DESCRIPTION:

On March 21, 2003, General Shale Products, LLC (now General Shale Brick, Inc.) submitted a Title V Operating Permit renewal application to the Division. Revisions to the permit application were received by the Division on June 28, 2004 and November 21, 2005. General Shale Brick, Inc. operates a face brick manufacturing plant (Plant #33) adjacent to State Highway 26, 2.5 miles south of Corbin at Woodbine, Kentucky. The primary SIC code for this facility is 3251.

Initial processing of the raw material, consisting of a combination of clay and shale, takes place in a large building housing storage piles, hoppers, a primary crusher, a secondary crusher, screens, and associated conveyors. After secondary crushing, the raw material is mixed with sand and water and formed into bricks by an extrusion process. The bricks are then dried and vitrified in two natural gas fired tunnel dryer/kilns. Kiln A was installed in 1972 and modified to burn coal in 1982. Kiln B was installed in 1986. Coal is no longer used as fuel for either kiln.

The potential to emit, as defined in 401 KAR 52:001, Section 1 (56), of particulate matter with a diameter of less than 10 micrometers (PM-10), carbon monoxide (CO), and sulfur dioxide (SO₂) for this source are each greater than one hundred (100) tons per year. Additionally, the potential to emit of a single hazardous air pollutant (HAP) and the combined HAPs for this source are greater than 10 and 25 tons per year, respectively. Therefore, the source is a major source under the Title V permitting program, 401 KAR 52:020.

In order to preclude applicability of 401 KAR 59:105, *New Gas Process Streams*, the source has taken voluntary production limits on the two tunnel kilns, identified as Kiln A and Kiln B, such that the emissions of SO₂ are limited to less than 100 tons per year. Such limits were included in initial Title V Permit No. V-99-002, issued May 5, 2000. Additionally, in order to remain below those limits listed in 401 KAR 53:010, *Ambient Air Quality Standards*, for gaseous fluorides (HF) the source has requested to take voluntary production limits on the tunnel kilns such that the hourly rate of brick production will not exceed 7.5 tons per hour, per kiln. Federally enforceable restrictions are included in the permit renewal for the two tunnel kilns to limit emissions and production below the applicability thresholds of 401 KAR 59:105 and 401 KAR 53:010. After incorporation of these federally enforceable restrictions, emissions of PM-10, CO and HAPs are greater than Title V major source thresholds. Therefore, the source will be issued a Title V Operating Permit renewal under 401 KAR 52:020, *Title V Permits*.

EMISSIONS AND OPERATING CAPS DESCRIPTIONS:

- (a) A stack test was performed on October 2, 1998 at the request of the Division to determine applicability of Regulation 401 KAR 59:105, *New Process Gas Streams*, for the two tunnel kilns (Kiln A and Kiln B). The results of the test determined an emission factor of 1.06 pounds of SO₂ per ton of brick produced. At 8,760 hours of operation, the emission factor indicated potential emissions of sulfur dioxide that exceed 100 tons per year, making the two kilns subject to Regulation 401 KAR 59:105, Section 4. The stack test results show that the kilns are able to comply with the sulfur dioxide concentration standard of 250 ppm, under 401 KAR 59:105. As such, General Shale Brick, Inc. requested a total annual production limit for the two kilns to preclude applicability of 401 KAR 59:105. A total annual (consecutive 12-months) production limit of 180,000 tons of bricks from both kilns was established in initial TV No. V-99-002. At this rate of production, sulfur dioxide emissions are limited to less than 100 tons per year, thus exempting both kilns from Regulation 401 KAR 59:105. This operating cap notwithstanding, the brick production at each kiln is also limited to not exceed 7.5 tons per hour (see paragraph (b) below). At 8,760 hours of operation, this equates to 131,400 tons per year. Therefore, compliance with the hourly production limit shall ensure compliance with the annual operating cap of 180,000 tons of bricks per year.
- (b) In order to avoid exceeding the ambient air quality standard for gaseous fluoride (HF), as listed in 401 KAR 53:010, the maximum hourly brick production rate for each of Kiln A and Kiln B will not exceed 7.5 tons per hour.

OPERATIONAL FLEXIBILITY:

There are no alternative operating scenarios proposed in this permit.